

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-6 Cancelled

7. (Currently Amended) An assay to screen anti-malarial drugs by testing for binding of a test compound with plasmodium 90 kDa heat shock protein which comprises:

(a) immobilizing said test compound covalently on a matrix thereby forming an immobilized test compound;

(b) reacting saponin-freed Plasmodial trophozoite lysate comprising plasmodium 90 kDa heat shock protein with said covalently-immobilized test compound;

(c) detecting binding of [[a]] plasmodium 90 kDa heat shock protein to said bound~~immobilized~~ test compound;

(d) selecting said test compound if binding between said plasmodium 90 kDa heat shock protein and said immobilized test compound is detected in step (c);

~~[[d]]~~(e) measuring growth of *Plasmodium falciparum* ~~in the presence~~ in an assay comprising measuring the number of *P. falciparum* ring forms growing into *P. falciparum* trophozoite forms with and without said selected ~~of said protein-bound~~ test compound, said number of ring forms and said trophozoite forms being measured with flow cytometry; and

~~[[e]]~~(f) comparing the growth of *P. falciparum* ~~in the presence of said protein bound~~ assay with and without said selected test compound ~~test compound to the~~

~~growth of *P. falciparum* in the absence of said protein bound test compound~~[[,]]; and

(g) ~~wherein~~ detecting a decrease in said measured growth of *P. falciparum* exposed to said ~~protein bound~~ selected test compound as compared to the growth of *P. falciparum* not exposed to said ~~protein bound~~ selected test compound is as being indicative of said ~~protein bound~~ selected test compound being an anti-malarial drug.

8. (Previously Presented) The assay as claimed in claim 7, wherein the plasmodium 90 kDa heat shock protein is from *Plasmodium falciparum*.

9. (Previously Presented) The assay as claimed in claim 7, wherein said matrix is selected from the group consisting of agarose and carboxymethylated dextran.

10. (Previously Presented) The assay as claimed in claim 9, wherein said carboxymethylated dextran matrix is attached to a gold surface.

11. (Currently Amended) The assay as claimed in claim 7, wherein ~~said detection~~ detecting binding of [[a]] plasmodium 90 kDa heat shock protein to said bound immobilized test compound ~~is performed by methods comprising~~ comprises detecting plasmodium 90 kDa heat shock protein with immunochemical methods, radiochemical methods ~~and/or~~ non-radioactive methods.

12. (Previously Presented) The assay as claimed in claim 11, wherein said radiochemical methods are selected from a group comprising 2D gel electrophoresis and fluorography.

13. – 15. (Cancelled)

16. (Previously Presented) The assay as claimed in claim ~~[[15]]~~7, wherein said test compound ~~of unknown structure~~ is derivatized with an amine functional group, ~~plurality of biotin molecules using photobiotin acetate followed by analysis using a~~ and ~~said matrix comprises a plurality of carboxylate functional groups~~ streptavidin-coated surface.

17. (New) An assay to screen anti-malarial drugs by testing for binding of a test compound with plasmodium 90 kDa heat shock protein which comprises:

- (a) derivatizing a test compound with an amine functional group;
- (b) immobilizing said derivatized test compound on a surface of a carboxymethylated dextran matrix having a plurality of carboxylate groups thereby forming an immobilized test compound, said immobilizing comprises admixing said derivatized test compound at a concentration of 20 mM in 8% dimethyl sulfoxide (DMSO) with 1-ethyl-3-(dimethylaminopropyl) carbodiimide hydrochloride, N-hydroxysuccinimide and ethanolamine HCl and said surface of said carboxymethylated dextran matrix forming an amide bond between said

derivatized test compound amine groups and said carboxymethylated dextran matrix carboxylate groups;

(c) blocking said carboxylate groups on said carboxymethylated dextran matrix not forming said amide bond with said immobilized test compound comprising adding 1M ethanolamine to said carboxylated dextran matrix after addition of said derivatized test compound;

(d) regenerating said matrix surface by a 50 s pulse of 0.5% SDS flowing at 10 $\mu\text{L}/\text{min}$;

(e) preparing a saponin-freed Plasmodial trophozoite lysate comprising mixing one volume of Plasmodial trophozoites and one volume of Tris-HCl buffer (TNESV buffer);

(f) clarifying said lysate by centrifuging said saponin-freed Plasmodial trophozoite lysate at 20,000 g for 20 min;

(g) reacting said immobilized test compound with said clarified saponin-freed Plasmodial trophozoite lysate by passing said saponin-freed Plasmodial trophozoite lysate at a flow rate of 1 $\mu\text{L}/\text{min}$ in TNESV buffer and measuring a change in refractive index as response units;

(h) washing said carboxymethylated dextran matrix to remove unbound plasmodium 90 kDa heat shock protein;

(i) detecting binding of a plasmodium 90 kDa heat shock protein to said immobilized test compound;

(j) selecting said test compound if binding between said plasmodium 90 kDa heat shock protein and said immobilized test compound is detected in step i;

(k) measuring growth of *Plasmodium falciparum* in an assay comprising measuring the number of *P. falciparum* ring forms growing into *P. falciparum* trophozoite forms with and without said selected test compound free of said matrix, said number of ring forms and said trophozoite forms being measured with flow cytometry;

(l) comparing the growth of *P. falciparum* in said assay with and without said selected test compound; and

(m) detecting a decrease in said measured growth of *P. falciparum* exposed to said selected test compound as compared to the growth of *P. falciparum* not exposed to said selected test compound as being indicative of said selected test compound being an anti-malarial drug.

18. (New) The assay as claimed in claim 17, wherein detecting binding of plasmodium 90 kDa heat shock protein to said immobilized test compound comprises detecting plasmodium 90 kDa heat shock protein with immunochemical methods, radiochemical methods or non-radioactive methods.